

set, then it is forward along one of the following process paths depending on packet type: TCP receive block 805a and TCP layer 7 search block 806a; UDP receive block 805b and UDP layer 7 search block 806b; or ICMP receive block 805c and ICMP layer 7 search block 806c. At ruleset manager block 807, the applicable rule is applied, and at packet transmission manager block 804, packet storage buffer block 808, and media access controller 801, the packet is taken from storage and readied for forwarding back through the network.

At Media Access Controller block 801, the steps are performed necessary to execute a communication link between the physical network and the C/PID hardware.

While particular embodiments of the invention have been described in detail, various modifications to these embodiments can be made without departing from the spirit and scope of the invention. Thus, the invention is limited only by the appended claims.

#### CLAIMS

1. A method for inserting second content into first content requested over the Internet by a first computer from a second computer and sent by the second computer over the Internet to the first computer comprising:

intercepting a request to establish a connection with the second computer sent by the first computer;

establishing a connection with the second computer and with the first  
computer;

receiving a request for the first content sent by the first computer;

sending the request for the first content to the second computer;

5 receiving a response from the second computer containing the first  
content; and

sending the first content and the second content to the first computer.

2. The method of claim 1 further comprising:

10 searching for a pre-determined rule for insertion based on the  
information contained in the request for content sent by the first computer to the  
second computer wherein the second content is sent to the first computer only if a  
pre-determined rule for insertion indicates that second content should be sent to the  
first computer.

15 3. The method of claim 2 wherein searching for a pre-determined rule is  
performed prior to forwarding the request to the second computer.

4. The method of claim 1 further comprising:

20 searching for a pre-determined rule for insertion based on the  
information contained in the response sent by the second computer containing the  
first content wherein the second content is sent to the first computer only if a pre-  
determined rule for insertion indicates that the second content should be sent to the  
first computer.

5. The method of claim 2 further comprising, prior to searching for a pre-determined rule for insertion:

checking IP address information associated with the request;

if the IP address information does not match pre-determined IP

5 address information to which a rule for insertion might apply, forwarding the requested content to the first computer without searching for a pre-determined rule for insertion.

6. The method of claim 4 further comprising, prior to searching for a pre-determined rule for insertion:

10 checking IP address information associated with the response;

if the IP address information does not match pre-determined IP

10 address information to which a rule for insertion might apply, forwarding the requested content to the first computer without searching for a pre-determined rule for insertion.

15 7. A method for inserting second content into first content requested over the Internet by a first computer from a second computer and sent by the second computer over the Internet to the first computer comprising:

monitoring communications between the first computer and the second computer;

20 receiving a request for the first content sent by the first computer;

sending the request for the first content to the second computer;

receiving a response from the second computer containing the first  
content; and

sending the first content and the second content to the first computer.

8. The method of claim 7 further comprising:

5 searching for a pre-determined rule for insertion based on the  
information contained in the request for content sent by the first computer to the  
second computer wherein the second content is sent to the first computer only if a  
pre-determined rule for insertion indicates that the second content should be sent to  
the first computer.

10 9. The method of claim 8 wherein searching for a pre-determined rule is  
performed prior to forwarding the request to the second computer.

10. The method of claim 7 further comprising:

15 searching for a pre-determined rule for insertion based on the  
information contained in the response sent by the second computer containing the  
first content wherein the second content is sent to the first computer only if a pre-  
determined rule for insertion indicates that second content should be sent to the first  
computer.

11. The method of claim 8 further comprising, prior to searching for a pre-  
determined rule for insertion:

20 checking IP address information associated with the request;

if the IP address information does not match pre-determined IP address information to which a rule for insertion might apply, forwarding the requested content to the first computer without searching for a pre-determined rule for insertion.

5        12.            The method of claim 10 further comprising, prior to searching for a pre-determined rule for insertion:

              checking IP address information associated with the response;

              if the IP address information does not match pre-determined IP address information to which a rule for insertion might apply, forwarding the requested content to the first computer without searching for a pre-determined rule for insertion.

10        13.            A method for inserting second content into first content requested over the Internet by a first computer from a second computer and sent by the second computer over the Internet to the first computer comprising:

15                steps for monitoring communications between the first computer and the second computer;

              steps for inserting second content into first content based upon pre-determined rules for insertion of content.

20        14.            A method for inserting second content into first content requested over the Internet by a first computer from a second computer and sent by the second computer over the Internet to the first computer comprising:

steps for monitoring communications between the first computer and the second computer;

steps for receiving a request for the first content sent by the first computer;

5 steps for sending the request for the first content to the second computer;

steps for receiving a response from the second computer containing the first content; and

10 steps for sending the first content and the second content to the first computer.

15. The method of claim 14 further comprising:

steps for searching for a pre-determined rule for insertion based on the information contained in the request for content sent by the first computer to the second computer wherein the second content is sent to the first computer only if a pre-determined rule for insertion indicates that the second content should be sent to the first computer.

16. The method of claim 15 wherein searching for a pre-determined rule is performed prior to forwarding the request to the second computer.

17. The method of claim 14 further comprising:

20 steps for searching for a pre-determined rule for insertion based on the information contained in the response sent by the second computer containing the

first content wherein the second content is sent to the first computer only if a pre-determined rule for insertion indicates that second content should be sent to the first computer.

18. The method of claim 15 further comprising, prior to searching for a pre-determined rule for insertion:

steps for checking IP address information associated with the request;  
steps for , if the IP address information does not match pre-determined

IP address information to which a rule for insertion might apply, forwarding the requested content to the first computer without searching for a pre-determined rule for insertion.

19. The method of claim 17 further comprising, prior to searching for a pre-determined rule for insertion:

steps for checking IP address information associated with the response;

steps for, if the IP address information does not match pre-determined IP address information to which a rule for insertion might apply, forwarding the requested content to the first computer without searching for a pre-determined rule for insertion.

20. A device for inserting second content into first content requested over the Internet by a first computer from a second computer and sent by the second computer over the Internet to the first computer comprising:

means for monitoring communications between the first computer and the second computer;

means for receiving a request for the first content sent by the first computer;

5 means for sending the request for the first content to the second computer;

means for receiving a response from the second computer containing the first content; and

10 means for sending the first content and the second content to the first computer.

21. The device of claim 20 further comprising:

means for searching for a pre-determined rule for insertion based on the information contained in the request for content sent by the first computer to the second computer; and

15 means for sending the second content to the first computer only if a pre-determined rule for insertion indicates that the second content should be sent to the first computer.

22. The device of claim 21 wherein the means for searching for a pre-determined rule performs the searching for a pre-determined rule prior to forwarding the request to the second computer.

23. The device of claim 20 further comprising:



means for searching for a pre-determined rule for insertion based on the information contained in the response sent by second computer containing the first content; and

means for sending the second content is sent to the first computer only if a pre-determined rule for insertion indicates that the second content should be sent to the first computer.

24. The device of claim 21 further comprising:

means for checking IP address information associated with the request;

means for, if the IP address information does not match pre-determined IP address information to which a rule for insertion might apply, forwarding the requested content to the first computer without invoking the means for searching for a pre-determined rule for insertion.

25. The device of claim 23 further comprising:

means for checking IP address information associated with the response;

means for, if the IP address information does not match pre-determined IP address information to which a rule for insertion might apply, forwarding the requested content to the first computer without invoking the means for searching for a pre-determined rule for insertion.

26. The method of claim 1 wherein the second content is transparent relative to the overall display and layout of the first content.

27. A method for delivering second content to a first computer that has requested first content over the Internet from a second computer before the first computer receives the first content comprising:

intercepting a request to establish a connection with the second computer sent by the first computer;

establishing a connection with the first computer;

receiving a request for the first content sent by the first computer;

delivering the second content to the first computer;

receiving a re-request for the first content from the first computer;

requesting the first content from the second computer;

receiving the first content from the second computer; and

sending the first content to the first computer.

28. The method of claim 27 further comprising:

searching for a pre-determined rule for insertion based on the information contained in the request sent by the first computer to the second computer;

wherein the second content is sent to the first computer only if a pre-determined rule for insertion indicates that the second content should be sent to the first computer.

29. The method of claim 28 wherein searching for a pre-determined rule is performed prior to forwarding the request to the second computer.

30. A device for delivering second content to a first computer that has requested first content over the Internet from a second computer before the first computer receives the first content comprising:

means for intercepting a request to establish a connection with the second computer sent by the first computer;

means for establishing a connection with the first computer;

means for receiving a request for the first content sent by the first computer;

means for delivering the second content to the first computer;

means for receiving a re-request for the first content from the first computer;

means for requesting the first content from the second computer;

means for receiving the first content from the second computer; and

means for sending the first content to the first computer.

31. The device of claim 30 further comprising:

means for searching for a pre-determined rule for insertion based on the information contained in the request sent by the first computer to the second computer;

means for sending the second content to the first computer only if a pre-determined rule for insertion indicates that the second content should be sent to the first computer.

32. The device of claim 31 wherein the means for searching for a pre-determined rule performs the searching for a pre-determined rule prior to forwarding the request to the second computer.

33. The device of claim 31 further comprising:  
means for checking IP address information associated with the request;

means for, if the IP address information does not match pre-determined IP address information to which a rule for insertion might apply, forwarding the requested content to the first computer without invoking the means for searching for a pre-determined rule for insertion.

34. A device for inserting second content into first content requested over the Internet by a first computer from a second computer and sent by the second computer over the Internet to the first computer comprising:

means for monitoring communications between the first computer and the second computer;

means for receiving a request for the first content sent by the first computer;

forwarding means for checking for first criteria in the request for first content, communicating information associated with the request for first content to a filtering means if the first criteria matches first pre-determined criteria indicating that a rule for insertion might apply to the request for first content, and forwarding the request to the second computer without further processing if the first criteria does not match the first pre-determined criteria;

the filtering means being for checking for second criteria in the request for first content, communicating information associated with the request for first content to a content insertion means if the second criteria matches second pre-determined criteria indicating that a rule for insertion might apply to the request for first content, and triggering forwarding of the request for first content without further processing if the second criteria does not match the second pre-determined criteria;

the content insertion means being for triggering sending of the second content to the first computer with the first content if the request for first content matches a pre-determined rule triggering insertion.

35. A device for inserting second content into first content requested over the Internet by a first computer from a second computer and sent by the second computer over the Internet to the first computer comprising:

means for monitoring communications between the first computer and the second computer;

means for receiving a response sent by the second computer  
responsive to the request for first content sent by the first computer;

forwarding means for checking for first criteria in the response,  
communicating information associated with the response to a filtering means if the  
5 first criteria matches first pre-determined criteria indicating that a rule for insertion  
might apply to the response, and forwarding the response to the first computer  
without further processing if the first criteria does not match the first pre-determined  
criteria;

the filtering means being for checking for second criteria in the  
10 response, communicating information associated with the response to a content  
insertion means if the second criteria matches second pre-determined criteria  
indicating that a rule for insertion might apply to the response, and triggering  
forwarding of the request for first content without further processing if the second  
criteria does not match the second pre-determined criteria;

15 the content insertion means being for triggering sending of the second  
content to the first computer with the first content if the response matches a pre-  
determined rule triggering insertion.

36. A method for modifying first content requested over the Internet by a  
first computer from a second computer and sent by the second computer over the  
20 Internet to the first computer comprising:

monitoring communications between the first computer and the second computer;

receiving a request for the first content sent by the first computer;

sending the request for the first content to the second computer;

5 receiving a response from the second computer containing the first content;

modifying the first content to create modified content; and

sending the modified content to the first computer.

37. The method of claim 36 further comprising:

10 searching for a pre-determined rule for modification based on the information contained in the request for content sent by the first computer to the second computer wherein the modified content is created and sent to the first computer only if a pre-determined rule for modification indicates that first content should be modified and otherwise the first content is sent to the first computer  
15 without being modified.

38. The method of claim 36 further comprising:

searching for a pre-determined rule for modification based on the information contained in the response sent by the second computer containing the first content wherein the modified content is created and sent to the first computer  
20 only if a pre-determined rule for modification indicates that first content should be

modified and otherwise the first content is sent to the first computer without being modified.

39. The method of claim 37 further comprising, prior to searching for a pre-determined rule for modification:

5                   checking IP address information associated with the request;  
                  if the IP address information does not match pre-determined IP address information to which a rule for modification might apply, forwarding the requested content to the first computer without searching for a pre-determined rule for modification.

10           40. The method of claim 38 further comprising, prior to searching for a pre-determined rule for modification:

                  checking IP address information associated with the response;  
                  if the IP address information does not match pre-determined IP address information to which a rule for modification might apply, forwarding the requested content to the first computer without searching for a pre-determined rule for modification.

41. The method of any of claims 36-40 wherein modifying includes blocking delivery of at least a portion of the first content to the first computer.

42. A method for modifying a request for first content, the first content  
20           being requested over the Internet by a first computer from a second computer comprising:



monitoring communications between the first computer and the second computer;

receiving the request for the first content sent by the first computer;

modifying the request for first content to create a modified content

request; and

sending the modified request to the second computer or to another computer.

43. The method of claim 42 further comprising:

searching for a pre-determined rule for modification based on the information contained in the request for first content wherein the modified request is created only if a pre-determined rule for modification indicates that the request for first content should be modified and otherwise the request for first content is sent to the second computer without modification.

44. The method of claim 43 further comprising, prior to searching for a pre-determined rule for modification:

checking IP address information associated with the request;

if the IP address information does not match pre-determined IP address information to which a rule for modification might apply, forwarding the request for first content to the second computer without searching for a pre-determined rule for modification.